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taining their bitter waters; shallow seas once salt, but each decade becoming more brackish; vast desert tracts which up to a recent time formed the ocean bed;—all these phenomena indicate a hemisphere gradually emerging from the waters. Perhaps the physicist can discern in these great periodic oscillations, the method by which Nature perpetually renews the youth of our planet, and maintains its fertility.

Gentlemen of the American Association:—The hour which, in your courtesy, had been assigned to me, has now lapsed, and I must bring these remarks to a close. The topics which have passed under review open up spheres of thought with regard to time and space too vast to be compressed within the limits of a mere oral discourse. Asserting no ability by reason of profound research to pass authoritatively on these results, may I not inquire: Have they not disclosed new paths in the great domain of Nature, which may be profitably explored jointly by the geologist and the astronomer; and is there not a probability that there will be found to exist an intimate relation between the periodic fluctuations of temperature on our planet, and the periodic perturbations to which it is subjected as a part of the solar system? Great as have been our achievements in science during the past, we profoundly believe that new triumphs await the patient observer.

VARIATIONS IN TRILLIUM AND WISTERIA.

BY THOMAS MEEHAN.

IN a recent number of the "Bulletin of the Torrey Botanical Club," of New York, Mr. J. H. Hall describes a plant of *Trillium erectum*, which he has had under his observation for several years, and which produced some years white, and other years the regular brown purple flowers. I have made

a similar observation this year in a *Wisteria sinensis*. Plants on my grounds have made an unusual second flowering. There were more blossoms in July than in April. Among them is a *snow white* variety, which has flowered annually for six years past at least. At this second flowering it took a notion to flower *blue*, — not quite as deep a blue as the regular tint of the well known kind; but still anything but the white we have always had before. It was very difficult for my gardener to believe that in some way or another "some hybridization" had not been going on. Potatoes frequently change this way in the color of the tubers, when the intelligent farmer is sure "there must have been some mixing of the pollen which in *some way* affected the circulation and changed the color." Dahlias, chrysanthemums, balsams, and many other things with parti-colored flowers, frequently have some wholly of one of the mixed colors; but all this in *some way* is supposed to be the work of art.

These natural variations I regard with much interest as teaching us that the law of evolution is not wholly through seed, and that those botanists who look for it in the embryology of the reproductive organs are not wholly on the right track.

Physiologists usually commence their treatises with "the seeds;" as if the seed was the primary element in the organization of vegetation, instead of the final result. Not that they really teach it, but this order of treating the subject gives the public mind that impression. Mr. Darwin's ideas seem to arise from some such reasoning as this. It seems hardly possible to conceive of first existences from eggs or seeds. True we see most of the changes through this medium *now*; but if we find cases in abundance (and I think we might if we looked for them) like these of *Trillium* and *Wisteria*, where changes occur independently of sexual influence, they will at least suggest another law to account for the origin of species.